Creating Complete Corridors
Comments from Karen Coffman
Maryland State Highway Administration
6/16/2008

GENERAL COMMENTS

Format and graphics look really good.

Add geographic information system (GIS) based discussion on bringing all context together in decision making process. Similar to McHarg's discussion in Design with Nature under chapter titled "A Step Forward".

PREFACE

Paragraph 3 – "…discuss how transportation landscape design integrates with engineering, construction, maintenance and operations." Does this guide address all of these components?

Paragraph 4 – "…will benefit from a more comprehensive guide, addressing the complex concerns of landscape and environmental design…" Is this a comprehensive guide that addresses the complex concerns?

INTRODUCTION

Page xiii:

Second photo on right, this doesn't really show a lot of constructed elements other than the roadway itself. How about putting a streetscape shot in.

Page xiv

Photo caption should explain the various stakeholders that are being addressed with the project.

Paragraph 1, last sentence – "It ~~will be~~ is useful to state and local agency staff,…"

CHAPTER 1

Page 1

Paragraph 4 – define modernist movement (dates, characteristics, impetus)

Page 3 – Refer to figure 1 and 2 in text.

Page 4

Paragraph 1 – Reword 1st sentence.

Paragraph 2 – Define context in more detail…physical setting is vegetation character (prairie, eastern hardwood forest, coastal salt marshes and dunes), topographic relief, climate (snow removal implications, arid landscapes, hydrologic cycle and flooding implications) population density, architectural character (historic districts), character of built environment (trailer parks, strip development, industrial settings), utility corridors (overhead lines), geology and soils, drainage patterns and watersheds (stormwater management, need for bridges) , wildlife character (types of passages necessary), air quality, noise, visual quality, , sensitive areas such as steep slopes, karst topography or acidic soils, other roadways and transportation systems,

Cultural context includes environmental regulations, political environments (smart growth), community dynamics, ethnic heritage, values (green highways, recycling), initiatives, restricted development zones (chesapeake and coastal bays critical areas), native landscapes (Bayscaping)

Roadway can add benefit to and derive benefits from the corridor. Benefits derived from the corridor can be views, topography adding interest to alignment, character of corridor. Benefits provided to the corridor can add economic value, connectivity, development opportunities, reduce congestion, improve access

Roadway can have negative impact on the corridor or be impacted negatively by the corridor. Negative impacts on the corridor can be increased pollution and litter, increased water flow discharges due to added imperviousness that can cause flooding and water pollution, increased thermal impacts to waterways, increase erosion ad sediment, increased light pollution, increased noise, increased congestion. The corridor can have negative impact on roadway by unsightly land uses, outdoor advertising

How is a context analysis performed, checklist? Guidance available?

Reword the second sentence to – "The context is the physical setting of the roadway, but it is also the social structure of the community that influences the appropriate type and scale of the roadway …."

Reword last sentence – "… and political context have been stalled for many years."

Paragraph 3 – Delete first sentence "The context is not just the current setting of a place." Start paragraph with "The context must also consider the future."

CHAPTER 2

Introduction – Start this section by answering the question, "What do we mean by 'the roadway corridor'?" Define the corridor more succinctly.

Corridor = roadway + roadway appurtenances (drainage structures, signs, lighting, fencing, ped accommodations, bike facilities, stormwater management facilities, mass transit, bridges, noise walls, utilities, wildlife crossings, etc) + context

Sentence 2 – the corridor doesn't actually encompass other jurisdictions, it may impact them unless they are actually taken as right-of-way.

Paragraphs 3, 4 &5 – Rather than contradict the Green Book functional classifications, perhaps we can call these 'Corridor Classifications' because they are not focused on geometrics but corridor parameters. Explain in more detail why these classifications are important. Answer the question, "So what?" for paragraph 5. How is addressing the setting helpful…impacts decisions on what?

Paragraphs 3 & 6 – add reference quotes from green book.

Page 8

Paragraph 1 – last sentence…remove the statement "apply common sense judgments" because if they were common sense judgments, this guide would not be needed.

Paragraph 3 – Although local roads are not addressed in this section, the Urban Core and Urban settings seem to rely on local streets mostly.

Enlarge graphic sections of corridor classifications (page 9 too)

Should 'Parkways' and 'Scenic Byways' be added as corridor classifications?

Page 11

Second Paragraph – "The combination of four road classes and six setting results in 24 roadway corridor types…." This should be moved to introduction on page 7 with the corridor classifications and setting discussed in general to explain to the reader how the two work together. Also, the number 24 should be spelled out since four and six are.

The photo of Exurban Setting seems to be more a rural setting (in Maryland anyway) and photo of Rural Setting seems to be more remote. Can we change photos?

Page 12

Exurban Corridors – may be connecting 2 major cities like Baltimore and Washington D.C. and would need greater degree of scrutiny for mass transit that is provided under this description.

CHAPTER 3

Page 17

Paragraph 2 – reference to the HNTB training should be moved to the reference section at the end of the chapter.

Environmental Compliance – how is this measured? i.e., how is improved water quality measured? Can this be broadened to Environmental Stewardship rather than compliance?

Compliance alludes to meeting regulatory requirements but stewardship goes beyond this.

Paragraph 4 – last sentence, delete word 'highway' in "…and analyzed for every project it will help ensure that highway a particular…"

Page 18

Safety, paragraph 2 – "yet, the accidents….Why?" Is there evidence to support this case? This should be documented with a case study or actual example.

Safety, paragraph 3 – Delete first sentence, "Why?" Reword "Because ….billiard balls." to explain the analogy….billiard balls that are simply acted on by physical forces, rather people think and respond to situations.

Page 19

Paragraph 1 – what is source of information on average commute? Can this change regionally?

Paragraph 3 – what is the source of the information on decreased size of households and relationship to number of vehicular trips? Are undocumented immigrant households considered in this?

Page 20

Access, paragraph 3, reword last sentence, "…should examine at the existing transit, bicycle, and pedestrian systems, to determine…"

Page 22

Paragraph 1, reword first sentence to "…evaluate potential alternatives, and determine how best to avoid or mitigate adverse impacts."

3.3 Environmental Compliance – reword to Environmental Stewardship.

3.3, paragraph 1 – how did the Bronx River Parkway and I-70 in Glenwood Canyon improve the environments? Were performance measures applied to the improvements to ensure they were accomplishing desired goals?

3.3, paragraph 2 – references to the 'pollution control agency' seem contrived. What agency is this?

3.3, paragraph 4 – last sentence, add 'for' after habitat.

3.3, paragraph 5 – this appears to be brainstorming ideas. I assume the final draft will have this section embellished.

Page 23

3.4, generally appears to be a draft that needs more work to finalize structure of writing and ideas.

Page 24

Paragraph 5 – last sentence add the word 'to' after funneled.

Last paragraph starting with 'The Context Sensitive Solution' – first sentence, delete the words shown from "Using the skills and engaging the creativity of the project's partners help implement ~~as part of the design of the project other~~ goals for community and economic…"

CHAPTER 4

I focused my review of Chapter 4 on SWM and roadway drainage to be sure I addressed those first. These comments don't cover all of Chapter 4.

Page 27

Photo caption – reword to "Proper Selection of geometrics can determine how well a road fits into the landscape."

4.1 Roadway

Break up the hydrology section on page 57 into 2 parts: Roadway Drainage and Stormwater Management. Place the Roadway Drainage section under 4.1 and keep SWM section under 4.3. Decisions and constraints in roadway drainage affect the development of the typical section (open or closed drainage sections) and should be part of the Roadway design discussion. Also, inlets, curb & gutter, LID devices like gutter filters or bio-inlets should be discussed as part of roadway design choices.

Page 28

Photo caption – Which roads aren't composed of a series of straight lines and curves?

Horizontal Alignment – Roadway drainage is affected by the curves (super elevation) and the straight/normal sections (center crown) of roadway. Stormwater management and drainage structures are tied to both horizontal (cross slopes) and vertical alignments (high and low points).

Natural drainage patterns matter in determining alignments as well as topography and natural vegetation, sensitive features…

Page 29

Paragraph 1 – "…natural landforms can help a roadway designer ~~can~~ create a graceful road…"

Page 30

Good discussions on cross sections and safety! Mention roadway drainage and stormwater management to the cross-section discussion.

Page 31

Paragraph 4 – period missing at end of second to last sentence

Paragraph 5 – include the FHWA recycled material policy in the references list.

Note difference between porous pavement where the pavement material itself (concrete or asphalt) is porous and allows water to permeate through it and porous pavement systems such as concrete blocks that are placed on aggregate filter beds to allow water to infiltrate around them. These are all high maintenance.

Note that NPDES Phase I requirement is to account for all impervious surfaces and begin treating these surfaces with SWM practices with the idea of reaching future goals for treatment (10%, 20% and on). Reducing impervious pavement placement should be stressed.

Page 32

Show photos of special concrete surface textures: tining, diamond grooving/grinding, exposed aggregate listed in paragraph 5.

Page 33

Bicycle Facilities – Because bikeways are often on the edge of roadways, in areas where the there is closed drainage (curb, gutter, inlets), the allowable gutter spread for runoff flow at the gutter should be reduced for bikeways in order to reduce depth of water the cyclist has to ride in during rain events.

Page 34

Paragraph 2 – rather than list the current AASHTO guide publish date, make mention to latest version. Delete sentence “an updated edition of the ….NCHRP Project 15-37” because this will be outdated information when the guide is issued.

Page 50

Signs – Sow photo of a sign that is blocked by plant material as example of what not to do. I think I have one to send you.

Page 57

Hydrology – Rename this to Stormwater Management. Place all discussion on roadway drainage items such as inlets, grates, pipe to section 4.1, Roadway. This section should be stormwater management features only.

Hydrology is the science that seeks to quantify and characterize rainfall and runoff. Hydraulics involves the design of structures that convey runoff and predicting the behavior of flow through structures under certain conditions. Both apply to stormwater management design and to roadway drainage design.

Page 58

Paragraphs 3 through 5 should be moved to the roadway drainage section. These begin with "There are two general approaches to …" and end with "…to intercept runoff from storm sewer systems before it reaches receiving waters."

Paragraph 5 – Delete the sentence "Catch Basins may succeed in filtering out sediment before the water ends up in a pond…" Catch basins are inlets and not designed to provide sediment removal.

Discussion on SWM needs more work. Add subheadings for temporary and permanent stormwater controls (ESC and SWM BMPs). Distinguish between these.

Mention should be made that permanent SWM facilities should be included in the roadway design concepts, presented to all stakeholders and the public.

Page 59

Discussion of the difference between quality and quantity controls should be included. Discussion on the potential impact of quantitative control to cumulatively have negative impacts on streams and waterways within the watershed should be included. Discussion on the green highways concept of watershed based SWM planning and permitting. Discussion should be added on the value of including recharge volumes.

Examples of ESC and permanent SWM BMP design guidelines can be included graphically. I can get you maryland's guidelines.

The descriptions of the types of SWM systems need work. Bioretention is a type of filtration system. Maryland uses these designations: Stormwater Ponds, Stormwater Wetlands, Infiltration (trench, basin), Filtration (bioretention, sand filter), Open Channel Practices (wet and dry swales, grass channels), non-structural practices. There are also Low Impact Development practices such as bio-inlets, gutter filter that are incorporated into drainage structure within the roadway design.

Visual Quality, safety and maintenance (access from public r/w for maintenance equipment) for permanent SWM facilities should be discussed. Disposal of sediments removed.

Trash and debris.

Permanent SWM in airport zones should not have open water that will attract waterfowl. See information on Bird Strike initiatives.

Mosquito potential near residential areas.

Photos of different types of facilities (I can dig up some photos for you on both permanent and temporary runoff controls)

Maryland's new 2007 Stormwater Management Law requires Environmental Site Design (ESD) initiatives. I can get you copy of the draft guidelines. This requires maintaining open drainage where possible, demonstrating concept design process and to integrate this as much as practical, and managing throughout drainage area rather than at the outfall.

Water Quality banking.

Page 61

Vegetation – add discussion on planting in airport zones and requirements for landscaping with low wildlife value.

Planting at SWM facilities, wetlands, bioretention,

Importance of vegetation establishment in permanent erosion & sediment control.

Page 78

Potential use of pedestrian space for stormwater LIDs in urban areas.